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ABSTRACT

This project examines the suitability of the General Examinations of the College Level Examination Program (CLEP) as an alternative battery to the Aptitude Test of the Graduate Record Examination (GRE) for the admission of vocational education teachers to master's level study of vocational education. The CLEP battery and the College Entrance Examination Board (CEEB) were administered to 732 vocational education teachers in Florida. Test norms for the teachers on the battery were constructed as a basis for defining an acceptable cutoff to graduate study at the master's level. Recommendations suggest that: (1) The CLEP be used as an alternative battery to the Aptitude Test of the GRE in the admission of vocational education teachers to graduate study in vocational education leading to a master's degree; and (2) that a total cutoff score of 2250 for the five tests comprising the General Examinations Battery of the CLEP be adopted for admission of vocational education teachers to master's level study. Additional recommendations and appendices of related material are included. (MJM)

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Final Report

Project No. 2-5034

From July 1, 1971 to December 31, 1972

The Suitability of the College Level Examination Program (CLEP) for Admitting Vocational Education Teachers to Graduate Schools of Education in the State Universities of Florida

Florida State Department of Education
Division of Vocational, Technical and Adult Education
Tallahassee, Florida

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Acknowledgments

It was a large order to administer a test battery that called for six hours of testing time to more than 700 vocational education teachers throughout Florida. This comprehensive program of testing could not have been accomplished without the assistance and cooperation of the following persons:

...presidents of the community colleges who agreed to make testing rooms and auditoriums on their campuses available for the project;

...testing specialists and their assistants in the community colleges who administered the battery;

...local directors of vocational education and members of their staffs who notified the teachers when and where to appear for testing and who answered many other questions raised by the teachers concerning the purpose of the project;

The vocational education teachers themselves who gave up one of their Saturdays to take the tests deserve a special measure of appreciation. The time and effort put forth by these teachers resulted in an accumulation of sufficient test scores which made possible the attainment of the objectives set forth in the project proposal.

There were many persons, too numerous to list, in the Divisions of Vocational, Technical, and Adult Education, Universities, and Community Colleges, as well as throughout the Department of Education, who gave valuable advisory direction to the project in its design and implementation stages. To all of these people, I express my deep appreciation.

The Division of Vocational, Technical, and Adult Education, together with the College Entrance Examination Board, provided the financial support for this project. I am most grateful for the funding made available by these two sources; without this financial support, there would have been no project.

G. Emerson Tully
Project Director

GET:mc
February, 1973
Tallahassee, Florida

College Level Examination Program (CLEP) Research Project
with Vocational Education Teachers

Summary and Recommendations

In 1971 and 1972, a research project aimed at assessing the suitability of the General Examinations of the College Level Examination Program (CLEP) as an alternative battery to the Aptitude Test of the Graduate Record Examination (GRE) for the admissions of vocational education teachers to master's level study of vocational education was conducted. As a part of the project, which was supported jointly by the Division of Vocational, Technical, and Adult Education, Department of Education of Florida, and the College Entrance Examination Board (CEEB) the CLEP battery was administered to a sample of 732 vocational education teachers in Florida. Test norms for the teachers on the battery were constructed as a basis for defining an acceptable cutoff to graduate study at the master's level.

Vocational education teachers must in addition to having a baccalaureate degree, become proficient in their occupational or trade speciality before seeking a master's degree. As a result of the time spent in occupational training and baccalaureate study, vocational education teachers are, as a group, considerably older when they apply to enter a master's level program of study than other persons entering graduate study. During these years of training and preparation, vocational education teachers continue to learn, but often through out-of-class learning experiences rather than in formal instruction at the college level.

The CLEP tests were found to be, in part, valid measures of out-of-class learning and were, therefore, judged to be more appropriate for establishing the eligibility of vocational education teachers to enter graduate study at the master's level than the Aptitude Test of the Graduate Record Examinations. A person who takes the GRE as a senior or soon after graduation is more likely to perform better on the GRE than after an interval of years. Vocational education teachers, however, do not usually follow the practice of taking the GRE when in their early 20's; in fact, many of them cannot follow such a practice because of not having earned the baccalaureate degree by that age.

The results of the study also pointed to the use of the CLEP tests with vocational education teachers seeking baccalaureate degrees in vocational education in lieu of the Twelfth Grade Battery.

The following recommendations, based on the findings of the study were made:

1. That the General Examinations of the College Level Examination Program (CLEP) be used as an alternate battery to the Aptitude Test of the Graduate Record Examinations in the admission of vocational education teachers to graduate study in vocational education leading to the master's degree.

2. That a total cutoff score of 2250 for the five tests comprising the General Examinations Battery of the CLEP be adopted (with a minimum score of 400 or above required for each of the five tests), for admission of vocational educational teachers to master's level study in vocational education, regardless of the age of the applicant.

3. That vocational education teachers with Rank III certificates who have taken the General Examinations of the CLEP and who have earned a score of 2000 or above not be required to submit a score on the Florida Twelfth Grade Battery, the Scholastic Aptitude Test of the CEEB, or the American College Testing Program (ACT) for entry into a baccalaureate-level program of study in vocational education at a state university in Florida.

4. That vocational education teachers who plan to take the General Examinations of the CLEP, either for the purpose of obtaining credit by examination, for admission to baccalaureate study or to a master's level graduate program, embark upon a course of action (course enrollment, correspondence study, or self-directed study) in English composition, mathematics, and the humanities before applying to take the General Examinations of the CLEP.

5. That vocational education teachers admitted to programs of study in vocational education on the basis of CLEP scores who subsequently wish to transfer to non-vocational education programs be required to meet established admissions criteria.

Final Report Project 2-5034: The Suitability of the College Level Examination Program (CLEP) for Admitting Vocational Education Teachers to Graduate Schools of Education in the State Universities of Florida

Project Director: G. Emerson Tully
Division of Universities
107 West Gaines Street
Tallahassee, Florida 32304

Date of Report: January 31, 1973

Purpose

The purpose of the project was to assess the suitability of the General Examinations of the College Level Examination Program (CLEP) as an admissions battery for vocational education teachers applying for graduate study in the public universities of Florida leading to the master's degree.

Underlying Problem

Under present admissions policies, all persons applying to enter graduate study in the State University System must have at least a "B" average during upper-division study leading to the baccalaureate or a score of 1,000 on the Aptitude Test of the Graduate Record Examination, except for persons entering law school, medical school, or graduate study in business. Entry into these professional schools, which are graduate schools in the sense that the baccalaureate degree is required, is by specialized test batteries: the Law School Admissions Test, the Medical School Admissions Test, or the Graduate Study in Business Test.

Each of the state universities, however, may accept up to 10 percent of its graduate students admitted for an academic year as exceptions to the established procedure. Students admitted as exceptions must meet other criteria set by the university, such as satisfactory performance in post-graduate study or in professional-level work.

Although vocational education teachers must pursue a program of graduate education to attain the higher levels of teacher certification, many persons preparing for a career in vocational education do not enter graduate study until their middle or late 30's. Vocational education teachers must acquire a proficiency in their chosen occupational fields to become certified, and many accomplish the work phase of their professional preparation as a vocational education teacher before entering into undergraduate work. Having invested time in both a full-time job and in undergraduate study, the vocational education teacher tends to take a teaching position as soon as he has completed all phases of his training, and to postpone entry into graduate study. More likely than not, when the vocational education teacher in Florida reaches a point in

his career development of embarking on a master's program of study, he encounters difficulty in meeting either of the two established admissions requirements.

Many test administrators and other educators regard the senior year of baccalaureate study as the time that persons generally will perform best on the Aptitude Test of the GRE. This belief is particularly widespread among educators in vocational, technical, and adult education. The Aptitude Test of the GRE is, in their view, less of a barrier to graduate study for the person of age 22 than for a person of age 35. In their thinking, the GRE Aptitude Test is more of an obstacle to vocational education teachers who seek to enter master's level work than to persons in other disciplines, inasmuch as vocational education teachers tend to be older than other candidates for graduate study when tested.

If the postulate is accepted that the span of years between classroom study and taking a test affects test performance adversely, then a fair and equitable admissions test for the vocational education teacher seeking to enter master's level study is one that measures out-of-class learning. The General Examinations of the College Level Examination Program (CLEP), "constructed to measure knowledge acquired through nontraditional means as well as through college study,"[1] warranted assessment as a possible alternative to the Aptitude Test of the GRE for specific use with vocational education teachers applying to enter a master's program of graduate study. The assessment procedure was designed to determine whether older applicants were to be accorded a lower score cutoff than relatively younger applicants.

There is some feeling among educators than no standardized measure of aptitude or achievement should be used to establish admission to graduate study. At the Tenth Annual Conference of the National Educational Association Center for Human Resources held in February, 1972, a resolution was adopted by the conference calling for a moratorium on standardizing testing. The conference recommended that "...colleges and universities eliminate the use of the Graduate Record Examinations, Miller's Analogy, and National Teachers Examination."[2] To the investigator, the position taken by the conference was too extreme. Certainly a greater degree of flexibility than now exists in the admission of vocational education teachers to master's level study is needed, but an elimination of all admissions testing to graduate level work might bring about a graduate enrollment too large for the universities to cope with effectively.

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[1]Tests and Services: College Level Examination Program, College Entrance Examination Board, New York, 1970, p. 4.

[2]Moratorium on Standardized Testing Urged, NCME Measurement News, Newsletter, National Council on Measurement in Education, Vol. 15, No. 4, October, 1972, p. 1.

Sharon analyzed the scores of more than 43,000 military personnel on the General Examinations of the CLEP to determine (a) the comparative performance of the non-college military personnel and a representative sample of college students, (b) the relationship between academic knowledge and formal education, and (c) whether the level of knowledge in a subject area is related to age. He found that the servicemen (69 percent of whom had no formal education beyond high school) were outscored significantly by the college students, that achievement on the CLEP rose according to level of education, and that there was a rise in knowledge as measured by the CLEP tests in relatively informal academic subjects (social studies-history) and a decline in more formal subjects (English composition and mathematics).[3]

Objectives of the Project

1. To administer the CLEP test to a stratified sample of vocational education teachers in Florida.

2. To determine the test performance of vocational education teachers with different levels of education (less than baccalaureate, baccalaureate, and master's degree).

3. To construct test norms of vocational education teachers according to level of formal education attained.

4. To explore the possibility of the CLEP as an instrument for awarding credit to vocational education teachers who have not earned the baccalaureate degree.

5. To recommend for Board of Regents consideration cutoff scores on the General Examinations of the CLEP battery for admission of vocational education teachers to graduate schools in lieu of present GRE cutoffs.

6. To assess the impact of age of the examinees when tested on test performance in the five areas (English composition, natural science, mathematics, humanities, and social studies-history) measured by the General Examinations of the CLEP.

.....

7. To assess the impact of taking the CLEP tests and of imparting knowledge of test performance on the career expectations of vocational education teachers.

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[3]Sharon, A. T., Adult Academic Achievement in Relation to Formal Education and Age, Adult Education Journal, Vol. XXI, No. 4, 1971, pp. 231-237.

Note: This objective was included in the study at the request of a doctoral student who assisted the project director in the design and conduct of the study. Analysis of the data pertaining to Objective Seven and the writing of a final report, which will likely be submitted as a doctoral dissertation, were not completed at the time the project ended and the project report covering the first six objectives was written.

The above set of objectives is the same as the objectives listed in the original proposal, except for two changes. Listed among the objectives was the construction of norms according to subject areas, classroom performance rating assigned by supervisors, and length of time between when the baccalaureate had been earned (or the teaching profession entered) and administration of the CLEP tests.

Once the 700 teachers had been tested, a review of the scores revealed that to divide the teachers into sub-groups according to subject areas, etc., would be to create sub-groups too small for establishing frequency tables. Therefore, norms by degree level only were constructed.

Although a rating scale was devised and tried out, it was not used in the study on the advice of several vocational directors. In their view, the use of the rating scale would identify only a very small number of unsatisfactory teachers, inasmuch as vocational education teachers generally were among their best teachers.

The rating scale, which had been used by vocational education directors for purposes outside of the scope of this project, is included in the appendix.

Method

In the first four months of the project (July through October, 1971), the following action was taken to prepare for administering the CLEP to vocational education teachers:

a. The Director of the Division of Vocational, Technical, and Adult Education, Florida Department of Education, wrote all superintendents and local directors of vocational education summarizing the objectives of the study and expressing his support.

b. In a follow-up to the letter from the Division, the project director wrote all local directors of vocational education sending them computer printouts of full-time vocational education teachers in each county for updating. In this way, a revised roster of vocational education teachers in the state was prepared. A random sample of teachers by county was selected from the updated consolidated roster.

c. A letter was written to the presidents of all community colleges asking that the testing be conducted on their campuses and that their testing personnel be allowed to give the tests. The community college presidents unanimously offered their facilities and designated a person on their staffs with whom specified arrangements for the testing could be made.

d. A letter of invitation to take the test was sent to the teachers falling in the random sample. Test administrators were informed of procedures to be followed in admitting examinees, in conducting the test, and in providing security for the test booklets.

By December 20, 1971, which marked the end of the fall testing period, a total of 490 vocational education teachers had taken the test battery. This number was below the desired number of 700 set forth in the research proposal. An investigation of why a fewer number of teachers reported for testing revealed that (a) some teachers did not want to devote a free day (the testing was done on Saturdays) to the six-hour long test, and (b) the letters of invitation, which were sent through administrative channels, did not reach some teachers in sufficient time for them to plan to take the test.

The testing period was extended through March, 1972, with emphasis being given to give a longer lead time between inviting teachers to take the test and the test date. Directors of vocational education in seven of the more populous counties arranged for the test to be given in vocational-technical centers and notified interested teachers of the testing date from their local offices.

At the close of the extended period of testing, 732 of the 7,000 or more certified vocational education teachers had taken the General Examinations of the CLEP. Although the original sample of teachers to be tested was drawn at random, vocational education teachers not in the sample who wanted to obtain a CLEP score were admitted to the test session. Less than 50 examinees were estimated to fall into this category of self-inclusion in the sample. Also, the investigator authorized the district directors of vocational education to designate teachers to report for testing in place of teachers in the sample who were not able, for one reason or another, to take the tests. As a result, the sample of teachers actually taking the test, although adequate in size for analysis, was not fully a random one.

Included in the 732 teachers tested were 57 teachers in Duval County who had been admitted on an experimental basis to graduate-level institutions who were screened by in-depth interviews by their supervisors and an evaluation of their teaching records instead of established admissions requirements. The association between the CLEP scores for this special group of examinees and their subsequent grades for the remainder of the school year was determined.

When testing was continued from 1971 until 1972, an extension of the project became necessary. A request by the project director to the Division of Vocational, Technical, and Adult Education that the project be extended through December 31, 1972, was approved. No additional funds beyond the original grant of $29,870.39 were sought.

Punched cards containing the scores of the five tests comprising the General Examinations of the CLEP were obtained from Educational Testing Service. The cards were grouped according to the degree level of the examinees (master's, baccalaureate, and non-baccalaureate) and percentile scores established for the three sub-groups of examinees. Mean scores for the teachers, grouped according to degree level, were computed. Mean scores of the teachers were compared to the college sophomore means obtained from College Board sources.[4]

No measures of the academic aptitude of either the college sophomores or the vocational education teachers were available to the investigator. Neither were the ages of the college sophomores available. The ages of the teachers were obtainable, however, making possible a comparison of the performance of the college sophomores with that of the teachers when the latter were grouped according to age. This comparison was intended to provide a tentative basis for assessing the impact of age on test performance.

Teachers who were selected in the sample to be tested were informed of the purpose of the project--to assess the suitability of the General Examinations of the CLEP as a possible alternate to the GRE Aptitude in the admission of vocational education teachers to master's level study. Also, all teachers in the sample were told that the CLEP scores earned as participants in the project could be used to obtain undergraduate credit if their scores met the cutoffs established by colleges and universities from which the teachers sought credit by examination. In that the non-baccalaureate teachers had more to gain immediately from taking the tests than the other two sup-groups of teachers, non-baccalaureate teachers in the sample may have been given a higher motivational set toward taking the tests than did the baccalaureate and master's degree examinees. No measurement of the attitude of the teachers toward taking the test was attempted, however, and no basis was established for weighing the impact of the motivational factor on test performance.

To assess the impact of the CLEP on aspiration level, teachers selected for testing were randomly divided into two experimental groups of equal size. Also, two control groups composed of teachers who were not scheduled to take the test were randomly selected.

Prior to testing, teachers in all four groups were mailed a letter explaining the objectives of the study. Included in the mailout were

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[4]What Your Scores Mean, College Level Examination Program, College Entrance Examination Board, 1971.

a questionnaire requiring each teacher to provide information about his personal characteristics such as age, sex, marital status, religion, etc., and a level of aspiration scale. The confidentiality of responses to these two instruments was emphasized in the transmittal letter.

Five months later when testing was completed, but prior to the dissemination of test results, one of the experimental groups and one of the control groups were readministered the questionnaire and the aspiration level scale. Test results were then distributed to both the experimental groups. Following the sending out of test scores, the remaining two groups (one experimental and one control) were readministered the questionnaire and the level of aspiration scale.[5]

Results and Discussion[6]

As expected, the test performance of vocational education teachers was shaped in part by the level of their formal education. The high means were obtained by master's level examinees, the next highest by baccalaureate examinees, and the lowest by non-baccalaureate examinees (Table 1).

The average mean score differences between teachers with the master's degree and those with the baccalaureate on the five tests was 30 points and the average score difference between teachers with the baccalaureate and those without the baccalaureate was 20 points. In a general sense, these findings supported Sharon's findings that CLEP scores rose according to the level of formal education of the examinees.

The percents of vocational education teachers, grouped according to degree level and age, scoring at or above the mean for college sophomores on each of the five tests were computed as an approach for viewing test score dropoff and rise in the test performance of the teachers.

Students in the college sophomore norm group exceeded the performance of vocational education teachers, not grouped by age, on nearly all five tests of the CLEP battery. As shown in Table 2, the percentages of teachers with scores at or above the mean for the norm group did not reach 50 percent except for master's level examinees in social studies-history.

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[5]The results of the phase of the study relating to change in aspiration level will be reported in the doctoral study now in progress.

[6]A summary of the findings of this project was presented to the 1973 Annual Conference of the National Council on Measurement in Education, New Orleans, Louisiana, in a paper titled "Comparative Performance of Vocational Education Teachers in Florida and College Sophomores on the General Examinations, College Level Examination Program (CLEP)." (Appendix H)

Table 1: Mean Scores on the General Examinations of the CLEP of Vocational Education Teachers at Three Degree Levels

	English Composition	Natural Science	Mathematics	Humanities	Social Studies-History
Master's					
(n = 62-64)	452	477	446	459	495
SD	104	91	84	89	79
Baccalaureate					
(n = 294-303)	421	448	413	439	456
SD	87	87	61	78	79
Non-Baccalaureate					
(n = 353-356)	373	442	403	420	445
SD	79	86	56	78	73

Although college sophomores outscored the vocational education teachers generally on the CLEP, the percentages in Table 2 revealed that considerable numbers of non-baccalaureate teachers, not all of whom had completed two years of college, scored at or above the means for the college sophomore sample. This finding suggested that test performance for all teachers in the sample was not fully determined by level of formal education.

The vocational education teachers were grouped according to level of education and age. Although the teachers were tested only once, reporting the means for each separate degree level and age bracket (Table 3) provided a basis for viewing the effect of age on test performance. The arrangement of test means shown in Table 3 was essentially the same as used by Sharon, except that the servicemen that he tested ranged in age mostly from 19 to 22, with 21 as the median age,[7] whereas, 63 percent of the teachers were age 41 or above.

Not only were the teachers who were tested considerably older than the servicemen tested by Sharon, but vocational education teachers generally who aspire to continue their education are also older than

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[7] Op cit., Sharon, p. 232.

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[7] Op cit., Sharon, p. 232.

persons enrolled in master's level graduate study. The average age of the vocational education teachers who indicated that they planned to seek either the master's or doctorate degree was 41 years. (Information concerning age and educational plans was taken from the level of aspiration scale filled out by teachers in both the tested and non-tested groups prior to the test administration phase of the study.)

Table 2: Percents of Vocational Education Teachers, Grouped According to Degree Level, Scoring at or Above the Means for College Sophomores

	English Composition	Natural Science	Mathematics	Humanities	Social Studies-History
Sophomore Mean	498 (n = 2582)	498 (n = 633	498 (n = 633)	499 (n = 678)	498 (n = 607)
Master's (n = 62-64)					
Percent Above Sophomore Mean	34%	41%	16%	35%	50%
Baccalaureate (n = 294-303)					
Percent Above Sophomore Mean	19%	29%	7%	19%	30%
Non-Baccalaureate (n = 353-356)					
Percent Above Sophomore Mean	7%	25%	5%	18%	22%

In contrast, the average age of students enrolled in master's programs of study throughout the State University System was 30 years. (This information was derived from State University System data tapes.) The pattern of higher and lower means scores for servicemen when age ranged from 19 to 22 did not fit precisely the pattern of scores earned by older vocational education teachers when age varied from 21 to 60. Whereas Sharon reported a rise in achievement in humanities and social studies-history for servicemen at the upper-age range, older teachers in the master's level sub-group scored lower on these two tests than

Table 3: Means of Vocational Teachers in the CLEP General Examinations by Degree Level and Age Bracket

	Sophomore Means	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.
Master's					
n		10	10	22	8
English	498	514	488	443	402
Nat. Sci.	498	513	499	462	480
Mathematics	498	496	456	447	412
Humanities	499	498	482	448	430
Soc. S.-His.	498	534	510	502	428
Baccalaureate					
n		58	49	54	30
English	498	440	403	411	418
Nat. Sci.	498	451	448	449	472
Mathematics	498	416	394	417	431
Humanities	499	428	418	445	450
Soc. S.-His.	498	445	443	464	472
Non-Baccalaureate					
n		14	61	148	83
English	498	392	373	379	365
Nat. Sci.	498	458	446	445	435
Mathematics	498	424	410	399	405
Humanities	499	401	402	425	422
Soc. S.-His.	498	432	445	454	438

younger teachers. On the other hand, the mean score of older teachers in science and mathematics declined, which was in keeping with Sharon's findings with older servicemen. For baccalaureate teachers, mean scores in natural science, humanities, and social studies-history rose somewhat as age increased. Showing the same pattern as the mean scores of the servicemen, mean scores for non-baccalaureate examinees in the older age bracket dropped in natural science and mathematics and rose in humanities and social studies-history.

Overall, this pattern of rises and dropoffs in test means for adults in the study sample did not reflect a loss of knowledge in the formal disciplines (natural science and mathematics) and a gain in less formal subjects (humanities and social studies-history), as suggested by Sharon's findings with younger servicemen. Vocational education teachers at all degree levels and age levels tended to perform best in natural science and social studies-history and poorest in English and mathematics.

Table 4 sets forth the percents of vocational education teachers scoring at or above the college sophomore means when the teachers were grouped into age brackets. In that the sample of teachers was not altogether a random one, and there were no controls for academic aptitude and motivational set toward the tests on the part of the teachers, constraints upon the findings were substantial. Even so, the data in Table 4 underscored the success achieved by substantial numbers of vocational education teachers, whose formal education was not only limited but which had ended some years earlier, in attaining the same level of proficiency on the battery as college sophomores.

As previously stated, 57 vocational education teachers in Jacksonville were admitted to a master's level program of graduate study with a waiver of the GRE test requirement for admission. These teachers were administered the CLEP tests after they had begun classes. No specific CLEP score was required of the teachers, either for admission or for being retained in the master's program.

Teachers selected for admission to the experimental program were subjected to in-depth interviews by vocational education supervisors. The classroom performance of the teachers, as revealed by available records, was also considered. Table 5 compares the CLEP means and standard deviations of the Jacksonville teachers and of the statewide sample of teachers, from which the Jacksonville teachers were excluded. As will be noted, the CLEP performance of the Jacksonville teachers exceeded the performance of teachers statewide on all tests except in natural science. Both groups of teachers were recipients of the baccalaureate.

As a final point in this discussion of the suitability of the General Examinations of the CLEP as an alternative test to the Aptitude Test of the GRE for teachers seeking to enter a program of graduate study leading to the master's degree, the adequacy of the number of

Table 4: Percents of Vocational Education Teachers, Grouped According to Age and Degree Level, Scoring at or Above the Means for College Sophomores

	Sophomore Means	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.
Master's					
n		10	10	22	8
English	498	60%	50%	32%	12%
Nat. Sci.	498	50%	60%	32%	38%
Mathematics	498	20%	20%	23%	12%
Humanities	499	50%	40%	32%	38%
Soc. S.-His.	498	80%	60%	50%	12%
Baccalaureate					
n		58	49	54	30
English	498	24%	10%	13%	20%
Nat. Sci.	498	38%	31%	26%	40%
Mathematics	498	12%	6%	9%	17%
Humanities	499	14%	10%	20%	33%
Soc. S.-His.	498	26%	33%	39%	43%
Non-Baccalaureate					
n		14	61	148	83
English	498	29%	5%	7%	6%
Nat. Sci.	498	43%	20%	28%	19%
Mathematics	498	14%	12%	2%	4%
Humanities	499	14%	16%	18%	20%
Soc. S.-His.	498	21%	23%	26%	23%

master's degrees in vocational education areas now being awarded by the State University System of Florida is reviewed.

Table 5: Means and Standard Deviations in the General Examinations, CLEP, for Jacksonville Vocational Education Teachers and a Statewide Sample

		English Composition		Natural Science		Mathematics		Humanities		Social Studies-History	
	n	M	SD	M	SD	M	SD	M	SD	M	SD
Jacksonville Teachers	57	451	88	436	79	420	38	467	70	467	66
Statewide Sample	293	416	85	450	86	410	66	432	78	454	81

Fifty-five of the 57 teachers who took the test and completed at least two quarters of graduate study achieved a "B" average or better in their graduate work. The mean scores for teachers with a 3.0 grade point average totalled 2248, providing an index for establishing a recommended total mean score cutoff on the CLEP for admitting vocational education teachers into graduate study.

Master's level programs in which most vocational education teachers enroll are adult education, business and commercial education, and industrial arts education, agricultural education, and home economics education. Table 6 shows the number of bachelor's, master's, and doctor's degrees awarded in the five-year period 1968-1972 by the seven state universities in (a) all education programs and in (b) vocational education areas. As revealed by Table 6, the absolute numbers of degrees both in vocational education and in all educational programs at all levels of degrees combined climbed steadily during the five-year period.[8]

[8]Some vocational education teachers enter master's level degree programs in administration and supervision. Master's degrees in administration and supervision are included in the category, "All Degrees in Education," in Table 7. Former vocational education teachers, who obtained master's degrees in administration and supervision, often accept non-vocational education positions as supervisors, coordinators, and principals.

Table 6: Total Education Degrees Awarded by the State Universities in Florida and Degrees Awarded in Vocational Education Fields of Study, Excluding Administration and Supervision, 1968-1972
(Table continued on next two pages)

	1968			1969			1970			1971			1972		
	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D
FAMU															
Total Degrees in Educ.	185	216	---	269	181	---	196	173	---	163	223	---	164	228	---
Degrees in															
Adult	---	---	---	---	---	---	---	---	---	---	---	---	---	4	---
Bus., Com.	---	---	---	39	---	---	8	---	---	10	---	---	9	---	---
Ind. Arts	---	---	---	19	1	---	20	4	---	14	2	---	4	2	---
Agri. Educ.	---	---	---	5	3	---	9	5	---	4	---	---	5	5	---
Home Ec.	---	---	---	22	5	---	16	3	---	10	1	---	13	3	---
FAU															
Total Degrees in Educ.	456	643	---	370	495	---	462	406	---	621	457	---	686	407	4
Degrees in															
Adult	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bus., Com.	16	---	---	12	---	---	33	---	---	30	---	---	23	---	---
Ind. Arts	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Agri. Educ.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Home Ec.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 6 - Continued

	1968			1969			1970			1971			1972		
	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D
FSU															
Total Degrees in Educ.	783	194	85	720	233	76	839	253	90	1065	391	136	1081	371	150
Degrees in															
Adult	---	8	9	---	---	---	---	11	9	---	14	12	---	14	17
Bus., Com.	15	2	---	10	---	---	11	---	---	15	---	---	16	---	---
Ind. Arts	40	15	1	26	10	1	32	14	1	31	15	1	31	19	5
Agri. Educ.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Home Ec.	74	6	---	49	8	3	63	6	1	60	8	1	66	7	---
FTU															
Total Degrees in Educ.	---	---	---	---	---	---	123	---	---	195	17	---	371	77	---
Degrees in															
Adult	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bus., Com.	---	---	---	---	---	---	9	---	---	10	---	---	13	2	---
Ind. Arts	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Agri. Educ.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Home Ec.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
UF															
Total Degrees in Educ.	436	377	64	562	337	101	582	404	73	631	311	98	731	454	66
Degrees in															
Adult	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bus., Com.	31	---	---	29	---	---	27	---	---	33	---	---	27	4	---
Ind. Arts	---	---	---	1	---	---	---	---	---	---	5	---	---	13	---
Agri. Educ.	7	16	---	12	7	---	16	12	---	8	14	---	11	11	---
Home Ec.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 6 - Continued

	1968			1969			1970			1971			1972		
	B	M	D	B	M	D	B	M	D	B	M	D	B	M	D
USF															
Total Degrees in Educ.	390	89	---	522	204	---	585	238	---	860	305	---	121	478	---
Degrees in															
Adult	---	---	---	---	---	---	---	17	---	---	23	---	---	---	---
Bus., Com.	159	12	---	32	10	---	47	14	---	55	33	---	64	73	---
Ind. Arts	---	---	---	---	---	---	---	---	---	---	6	---	---	---	---
Agri. Educ.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Home Ec.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
UWF															
Total Degrees in Educ.	2	---	---	212	---	---	347	9	---	349	21	---	360	48	---
Degrees in															
Adult	---	---	---	---	---	---	---	---	---	---	---	---	32	---	---
Bus., Com.	---	---	---	9	---	---	11	---	---	---	---	---	---	---	---
Ind. Arts	---	---	---	11	---	---	54	---	---	64	---	---	54	---	---
Agri. Educ.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Home Ec.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Degrees in Voc. Educ., SUS	342	59	10	276	44	4	356	86	11	344	121	14	368	157	22
Total Degrees in Educ., SUS	2252	1519	149	2655	1450	177	3134	1483	163	3884	1725	234	3514	2063	220

An estimated 55% percent of the vocational education teachers in the secondary schools of Florida do not have the baccalaureate, but are certified on the basis of competence and experience gained in trade, business, or industry. Vocational education teachers from business and industry (many of whom have continued their formal education in the community colleges), together with the supply of baccalaureate recipients from the universities, provide a supply of trained manpower to meet the need for classroom and shop teachers in vocational education. As enrollment in vocational education courses soars, as it is expected to do, the present-day balance between supply and demand is likely to become disrupted.

There is no such balance between supply and demand for persons with master's level training in vocational education. Although the percent of teachers awarded the master's degree in vocational education programs has doubled in a five-year period (Table 7), only eight out of every one-hundred master's degrees awarded by the state universities in 1972 was in vocational education. The public schools, the community colleges, and the technical centers are entirely dependent upon the output of persons with training at the master's level in vocational education from the state universities as there is no flow of candidates to fill positions calling for instructional supervisors, community college deans, directors of vocational education, coordinators, and department heads from business and industry. Also, a substantial number of the master's level persons elect to continue their education toward the doctorate, which further reduces the number of candidates available to accept positions of leadership in vocational education. As a result, there is a current shortage of persons with the master's degree in vocational education to fill the top positions that are open. This shortage will become more acute in the years ahead as the career education movement in the secondary schools and the community colleges intensifies.

Table 7: Degrees Awarded in Vocational Education Areas As a Percentage of Total Degrees in Education Earned, State University System, 1968-1972

	Bachelor's	Master's	Doctor's
1968	15%	4%	7%
1969	10%	3%	2%
1970	11%	6%	7%
1971	9%	7%	6%
1972	10%	8%	10%

Providing vocational education teachers with an opportunity to take the test at periodic intervals, CLEP testing centers are being established in the major cities of Florida. Vocational education teachers who wish to take the test to obtain credit by examination or for any other purpose now have better access to taking the CLEP than ever before.

Although the focus of this study was to assess the suitability of the General Examinations of the CLEP as an alternative test to the Aptitude Test of the GRE as an admission battery to master's level work in vocational education, the nature of the CLEP battery, and its increasing availability to teachers, suggest that the CLEP be also used to substitute for the Florida Twelfth Grade Battery that is now required of vocational education teachers, even though they possess a Rank III certificate, applying to enter a program of study in vocational education leading to the baccalaureate degree.

The reluctance of vocational education teachers to take the Twelfth Grade Battery is understandable. The battery is not given frequently, and also, teachers who take the tests must do so in groups largely made up of high school students. Persons taking the CLEP are likely to include more adults, thereby providing a setting for testing in which the vocational education teacher feels more comfortable.

To some extent, the Twelfth Grade Battery and the CLEP tests measure the same cognitive functions, inasmuch as both batteries contain achievement tests in the broad areas of English, social studies-history, mathematics, and natural science. There are important differences, however. The Twelfth Grade Battery includes a measure of academic aptitude, and the CLEP tests do not. The CLEP tests seek to measure knowledge in the humanities more directly than the Twelfth Grade Battery.

Conclusions

The study was designed to obtain evidence to be brought to bear on the postulate that the interval of time that passes between a person's leaving a program of formal education and taking a comprehensive test battery affects test performance. The study provided no clear-cut findings that suggested that the span of years between classroom study and test taking was either solely an adverse or a salutary factor to test performance. For persons in one age bracket and level of education, achievement test scores in some academic areas rose. For persons in another age bracket and a different level of classroom study, scores dropped.

Vocational education teachers who aspire to seek a graduate degree are approaching middle age (average age was found to be 41 years), so there is a considerable interval of time between formal classroom study for these teachers and entry into graduate study. Overall, the teachers were not penalized by this interval of time, as the falloff in CLEP

scores of older examinees in some subject areas of the battery was affected by improved scores in other subject areas. Also, the findings revealed that substantial numbers of individuals between the ages of 21 and 60 performed creditably on the battery as a whole. The Aptitude Test of the GRE, however, not designed to measure out-of-class learning, poses more of a handicap for the vocational education teachers than the CLEP. The CLEP battery, therefore, can be looked upon as a suitable device for identifying those persons who continue to learn in some subject areas after their formal education has ended and for this reason, is a better admissions battery for vocational education teachers entering graduate work in vocational education than the GRE.

The General Examinations of the CLEP clearly have merit for awarding credit to non-baccalaureate vocational education teachers seeking to obtain credit by examination to apply toward the baccalaureate and admitting applicants to master's level study in vocational education. The CLEP battery also has the potential of being used as an admissions test to a vocational education program of study at the baccalaureate level provided that a lower total score cutoff is used with persons entering baccalaureate study than with beginning graduate students in vocational education.

Vocational education teachers seeking to establish credit by examination, or to enter either a baccalaureate program or a master's level study, should consider remedial work in English, mathematics, and the humanities. The results of this study did not provide a basis for inferring whether performance was low because of increased age or because knowledge in these areas was never acquired in the first place. Unquestionably, however, these three areas require the attention of vocational education teachers generally who aspire to attain higher level of certification by returning to formal classroom study or through credit by examination.

Recommendations

1. That the General Examinations of the College Level Examination Program (CLEP) be used as an alternate to the Aptitude Test of the Graduate Record Examinations for the admission of vocational education teachers to graduate study in vocational education leading to the master's degree.

2. That a total cutoff score of 2250 for the five tests comprising the General Examinations Battery of the CLEP be adopted (with a minimum score of 400 or above required for each of the five tests), for admission of vocational education teachers to master's level study in vocational education, regardless of the age of the applicant.

3. That vocational education teachers with Rank III certificates who have taken the General Examinations of the CLEP and

who have earned a score of 2000 or above not be required to submit a score on the Florida Twelfth Grade Battery, the Scholastic Aptitude Test of the CEEB, or an American College Testing Program (ACT) score for entry into a baccalaureate-level program of study in vocational education at a state university in Florida.

4. That vocational education teachers who plan to take the General Examinations of the CLEP, either for the purpose of obtaining credit by examination, for admission to baccalaureate study or to a master's level graduate program, embark upon a course of action (course enrollment, correspondence study, or self-directed study) in English composition, mathematics, and the humanities before applying to take the General Examinations of the CLEP.

5. That vocational education teachers, admitted to programs of study in vocational education on the basis of CLEP scores, who subsequently wish to transfer to non-vocational education programs be required to meet established admissions criteria.

Appendix A

Project Proposal

Title: Assessing the Suitability of the General Examinations of the College Level Examination Program (CLEP) for Admitting Vocational Education Teachers to Graduate Schools of Education in the State Universities of Florida*

I. Nature of the Proposed Project

A. Problem

Under present admissions policies, applicants entering graduate study in the State University System must have a "B" average during upper-division study leading to the baccalaureate or a score of 1,000 on the Aptitude Test of the Graduate Record Examination, except for persons entering law school, medical school, or graduate study in business. Entry into these professional schools which are graduate schools, in the sense that the baccalaureate degree is required, is by specialized test batteries: the Law School Admissions Test, the Medical School Admissions Test, and the Graduate Study in Business Test.

Many of vocational-technical teachers in schools and colleges of Florida today elected to begin teaching after being certified (or receiving the baccalaureate), thereby delaying entry into graduate work. The probability that experienced vocational-technical teachers will meet the prescribed cutoff on the Graduate Record Examinations for entry into graduate study decreases as the length of time between undergraduate and graduate study increases. As a result, a substantial number of vocational-technical teachers with prolonged classroom experience are not able to begin a program of graduate work because of the GRE cutoff requirements. The proposed study will examine the use of an alternate test design to measure the out-of-class learning that takes place between formal education and a delayed entry into graduate study.

II. Need for Proposed Project

A. Need

Unless an alternative test to the GRE is made available to vocational-technical teachers seeking to enter graduate study, there is a likelihood that much of the potential of experienced vocational-technical personnel now teaching in the schools and colleges of Florida will not be properly utilized.

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*Research proposal submitted to the Director of the Division of Vocational, Technical, and Adult Education, Department of Education, State of Florida, June 18, 1971.

B. Purpose

The purpose of the project is to assess the suitability of the General Examinations of the College Level Examination Program (CLEP) as an admission battery for vocational-technical teachers applying for graduate study in the public universities of Florida.

C. Specific Objectives

1. To administer the CLEP tests to a stratified sample of vocational-technical teachers in Florida.

2. To determine the test performance of vocational-technical teachers with Rank I, II, and III certificates.

3. To construct test norms of vocational-technical teachers according to subject areas, level of certification, classroom performance rating assigned by supervisors, and length of time since earning baccalaureate or entering the teaching profession.

4. To explore the possibility of the CLEP as an instrument for awarding credit to vocational-technical teachers who have not earned the baccalaureate degree.

5. To recommend for Board of Regents consideration cutoff scores on the General Examinations of the CLEP battery for admission of vocational-technical teachers to graduate schools in lieu of present GRE cutoffs.

6. To assess the impact of taking the CLEP tests and of imparting knowledge of test performance on the career expectations of vocational-technical teachers.

III. Procedure for Proposed Project

A. Hypothesis

In assessing suitability of the CLEP tests as an admissions battery for vocational-technical teachers applying for graduate study, no hypothesis will be tested. Instead, the project will provide the necessary data base to develop test norms for vocational-technical teachers, and to determine an appropriate cutoff score for entry into graduate schools.

Tangential to the central thrust of the study will be an attempt to appraise the impact of taking tests and of being informed of test performance on career plans of vocational-technical teachers. This aspect of the study is experimental in design and will determine the significance of the following hypothesis: there is no difference in the level of aspiration of vocational-technical teachers (as measured by a specially constructed scale) who take

the test and who are informed of their scores, and of vocational-technical teachers who did not take the battery.

B. Sample

A sample of at least 700 vocational-technical teachers will be drawn from the universe of more than 7,000 full-time vocational-technical teachers in Florida. The sample will be stratified among teachers according to level of certification.

The sample will be divided randomly into an experimental group (to be tested) and a control group (not to be tested).

C. Design

Subjects in the experimental group will be rated by their supervisors, and will be asked to complete the level of aspiration scale. Following this, the experimental group will be administered the CLEP tests. After the tests are administered, the subjects will be asked to respond to the level of aspiration scale. Approximately three months later, after subjects have been informed of their test scores, they will again be asked to complete the level of aspiration scale.

Subjects in the control group will be rated by supervisors and requested to complete the level of aspiration scale at the same time as the subjects in the experimental group. The control group will not be administered the CLEP tests.

D. Data and Instrumentation

Instruments to be used are:

1. General Examination, College Level Examination Tests (CLEP) to be purchased from Educational Testing Service, Princeton, New Jersey.

2. Rating Scale for Teachers, developed especially for the project by the director.

3. Level of Aspiration Scale, also constructed especially for the project by the director.

E. Data Analysis

The CLEP tests will be scored by Educational Testing Service, Princeton, New Jersey. Test norms for the sample will be constructed by level of certification, supervisor rating category, and subject matter area.

The rating scale and the level of aspiration scale will be scored by the project personnel.

F. Time Schedule

1. The ratings of teachers by supervisors will be obtained in September, 1971.

2. The CLEP tests will be given during September-October, 1971.

3. Results of test performance will be reported in December, 1971.

4. Level of aspiration scales will be administered in September, 1971; November, 1971; and January, 1972.

5. Construction of norms and evaluation of cutoff scores will take place in February, 1972.

6. Comparative analysis of the level of aspiration scale of the control and experimental group will be done in March and April, 1972.

7. Preparation of final reports will begin in May, 1972, and will be completed in June, 1972.

IV. Personnel

A. Project Director

G. Emerson Tully, Director of Educational Research, Division of Universities. Dr. Tully, who holds the Ed.D. from the University of Illinois (1953) was formerly Professor of Educational Research and Testing, Florida State University (1957-1965), and also served as Director of the University Test Service at that institution during the eight year period that he was in the Department of Educational Research and Testing. From 1955-1957, he served as a consultant to the federal school system of Brazil under a cooperative agreement between the United States and Brazil. He is author of numerous research reports published in educational research journals, and has been associated with a number of funded research projects. He is a Certified Psychologist under the laws of Florida (License No. 141).

B. Assistant Project Director

David C. McOuat, Research Associate, Division of Universities, has been employed by the Florida Board of Regents for the past four years. Mr. McOuat was formerly employed by the Dade County Board of Public Instruction as an Industrial Arts Teacher

(1960-1963) and as an Instructor and Program Advisor in the Technical, Vocational, and Semi-Professional Division at Miami-Dade Junior College (1963-1966). In 1966, he joined the Board of Regents staff and has served in both the Division of Academic Affairs and the Division of Planning and Evaluation. He has recently completed his course requirements for the Ph.D. Degree in Adult Education at Florida State University.

To implement the project successfully it will be necessary for the project director to plan the following activities jointly with the Vocational Division staff:

1. Development of criteria for selecting vocational-technical teachers for the experimental group.

2. Identification of individuals in experimental and control groups.

3. Selection of dates, places, and personnel to administer test batteries and rating scales.

The Administrator of Research and Evaluation will be the contact person in the Vocational Division for this project.

Contact with District School personnel must be made through the Research and Evaluation Administrator to insure proper use of communication procedure.

VTAD-2A
ATTACHMENT II

STATE DEPARTMENT OF EDUCATION

FLOYD T. CHRISTIAN, Commissioner

Division of Vocational, Technical, and Adult Education

Tallahassee, Florida 32304

Project No. _____
(State Office Use Only)

INFORMATION FOR REIMBURSEMENT OF SALARIES

1 Name of Person	2 Position	3 Rank and Contract Status	4 Term of Service This Year	5 Total Salary for Year	6 Salary Reimbursement Request	7 State-County Retirement and Social Security	8 Total Cost of Service (6 + 7)	9 State Office Use Only
Olk, Ellen	Staff Assistant I		6 months (7/1/71 to 12/31/71)	6,132.00	3,066.00		3,066.00	
To be selected	Staff Assistant I		6 months (1/1/72 to 6/30/72)	6,132.00	3,066.00		3,066.00	
To be Selected	Staff Assistant II		6 months (1/1/72 to 6/30/72)	6,552.00	3,276.00		3,276.00	
Gross, Paulette S.	Graduate Assistant		6 months (9/15/71 to 3/15/72)	3,000.00	1,500.00		1,500.00	
To be selected	Consultants and Test Administrators		At periodic intervals (10/1/71 to 6/30/72)	1,750.00			1,750.00	
To be selected	Secretary II		9 months (10/1/71 to 6/30/72)	4,368.00	3,276.00	301.39	3,577.39	
						Totals	$16,235.39	

VTAD-2A
ATTACHMENT II

STATE DEPARTMENT OF EDUCATION

FLOYD T. CHRISTIAN, Commissioner

Division of Vocational, Technical, and Adult Education

Tallahassee, Florida 32304

Project No. _____
(State Office Use Only)

INFORMATION FOR REIMBURSEMENT OF SALARIES

1 Name of Person	2 Position	3 Rank and Contract Status	4 Term of Service This Year	5 Total Salary for Year	6 Salary Reimbursement Request	7 State-County Retirement and Social Security	8 Total Cost of Service (6 + 7)	9 State Office Use Only
Olk, Ellen	Staff Assistant I		6 months (7/1/71 to 12/31/71)	6,132.00	3,066.00		3,066.00	
To be selected	Staff Assistant I		6 months (1/1/72 to 6/30/72)	6,132.00	3,066.00		3,066.00	
To be Selected	Staff Assistant II		6 months (1/1/72 to 6/30/72)	6,552.00	3,276.00		3,276.00	
Gross, Paulette S.	Graduate Assistant		6 months (9/15/71 to 3/15/72)	3,000.00	1,500.00		1,500.00	
To be selected	Consultants and Test Administrators		At periodic intervals (10/1/71 to 6/30/72)	1,750.00			1,750.00	
To be selected	Secretary II		9 months (10/1/71 to 6/30/72)	4,368.00	3,276.00	301.39	3,577.39	
						Totals	$16,235.39	

[illegible]-2B
ATTACHMENT H

Project No. [illegible]
(State Office Use Only)

STATE DEPARTMENT OF EDUCATION

Floyd T. Christian, Commissioner
Division of Vocational, Technical, and Adult Education
Tallahassee, Florida

INFORMATION FOR REIMBURSEMENT OF LOCAL TRAVEL EXPENSES

1	2	3
Name of Person	Position	Amount Requested
G. Emerson Tully	Project Director 2,000 miles @ 10¢ 30 days @ $17.00	~~200.00~~ ~~510.00~~
David McOuat	Assistant Project Director 1,800 miles @ 10¢ 18 days @ $17.00	~~180.00~~ ~~306.00~~
Test Administrators and other support personnel	8,300 miles @ 10¢ 55 days @ $17.00	~~830.00~~ ~~935.00~~
	TOTAL	2,961.00

TAD 2C
ATTACHMENT II

Project No. _____
(State Office Use Only)

STATE DEPARTMENT OF EDUCATION

Floyd T. Christian, Commissioner
Division of Vocational, Technical, and Adult Education
Tallahassee, Florida

INFORMATION FOR REIMBURSEMENT OF PURCHASE OF EQUIPMENT AND SUPPLIES

1	2	3	4	5	6
Item No.	Quantity	Description of Item	Unit Cost	Total Cost	Code E or S
		EQUIPMENT AND SUPPLIES			
1	1	Typewriter rental, 9 months, 10/1/71 to 6/30/72	30.00 Mo.	270.00	E
2	200 reams	Paper	1.37	274.00	S
3	1	File Cabinet	100.00	100.00	E
4	1,248 sets	CLEP General Examinations	5.00	6,240.00	S
		OTHER			
1		Office Rental, 9 months, 200 sq. ft.	4.50 sq. per year	600.00	
2	3,000	Postage	.08	240.00	
3	3	Printing, Binding 3 publications, 500 copies of each @	100.00	300.00	
4	3½ hrs.	Computer Time	300.00 Hr.	1,050.00	
5		Mimeographing Rating Scale, Level of Aspiration		1,000.00	
6		Test Scoring Services		700.00	
			TOTAL	10,774.00	

Appendix B

Interim Report Project 2-5034: Assessing the Suitability of the College Examination Program (CLEP) for Admitting Vocational Students to Graduate Schools of Education in State Universities of Florida

Project Director: G. Emerson Tully
Division of Universities
107 West Gaines Street
Tallahassee, Florida 32304

Date of Report: March, 31, 1972

A. Purpose of Project

The purpose of the project is to assess the suitability of the General Examinations of the College Level Examination Program (CLEP) as an admissions battery for vocational education teachers applying for graduate study in the public universities of Florida.

B. Underlying Problem

Under present admissions policies, all persons applying to enter graduate study in the State University System must have a "B" average during undergraduate study leading to the baccalaureate or a score of 1,000 on the Aptitude Test of the Graduate Record Examination, except for persons entering law school, medical school, or graduate study in business. Entry into these professional schools which are graduate schools in the sense that the baccalaureate degree is required is by specialized test batteries: the Law School Admissions Test, the Medical School Admissions Test, and the Graduate Study in Business Test.

Many of the vocational education teachers in the schools and colleges of Florida today elected to begin teaching after being certified (or receiving the baccalaureate), thereby delaying entry into graduate work. The probability that the experienced vocational education teacher will meet the prescribed cutoff on the Graduate Record Examinations for entry into graduate study decreases as the length of time between prior formal education and graduate study increases. As a result, a substantial number of vocational education teachers with prolonged classroom experience are not able to begin a program of graduate work because of the GRE cutoff requirement.

C. Objectives

The results to date in the development of this project can best be discussed with reference to the objectives of the project, which as previously stated in the project proposal are as follows:

1. To administer the CLEP test to a stratified sample of vocational education teachers in Florida.

2. To determine the test performance of vocational education teachers with Rank I, II, and III certificates.

3. To construct test norms of vocational education teachers according to subject areas, level of certification, classroom performance rating assigned by supervisors, and length of time since earning baccalaureate or entering the teaching profession.

4. To explore the possibility of the CLEP as an instrument for awarding credit to vocational education teachers who have not earned the baccalaureate degree.

5. To recommend for Board of Regents consideration cutoff scores on the General Examinations of the CLEP battery for admission of vocational education teachers to graduate schools in lieu of present GRE cutoffs.

6. To assess the impact of taking the CLEP tests and of imparting knowledge of test performance on the career expectations of vocational education teachers.

D. Procedure

Planning for and Administering the CLEP to Vocational Teachers: In the first four months of the project (July through October, 1971), the following action was taken to prepare for administering the CLEP to vocational teachers:

Dr. Carl W. Proehl, Director, Division of Vocational, Technical, and Adult Education, Florida Department of Education, wrote all superintendents and local directors of vocational education summarizing the objectives of the study and expressing his support.

In a follow-up to Dr. Proehl's letter, the project director wrote all local directors of vocational education sending them computer printouts of full-time vocational education teachers in each county for updating. In this way, a revised roster of vocational education teachers in the state was prepared. A random sample of teachers by county was selected from the updated consolidated roster.

A letter was written to the presidents of all community colleges asking that the testing be conducted on their campuses and that their testing personnel be allowed to give the tests. The community college presidents unanimously offered their facilities and designated a person on their staffs with whom specific arrangements for the tests could be made.

A letter of invitation to take the test was sent to the teachers falling in the random sample. Test administrators were informed of

procedures to be following in admitting examinees, in conducting the test, and in providing security for the test booklets.

In December, 1971, which marked the end of the fall testing period, a total of 490 vocational education teachers had taken the test battery. This number was below the desired number of 700 set forth in the research proposal. An investigation of why a fewer number of teachers reported for testing revealed that (a) some teachers did not want to devote a free day (the testing was done on Saturdays) to the six-hour long test, and (b) the letters of invitation, which were sent through administrative channels, did not reach some teachers in sufficient time for them to plan to take the test.

The testing period was extended through March, 1972, with emphasis being given to give a longer lead time between inviting teachers to take the test and the test date. Directors of Vocational Education in seven of the more populous counties arranged for the test to be given in vocational-technical centers and notified interested teachers of the testing date from their local offices.

In early January, 1972, the teachers who were tested in the fall were informed that a second wave of testing would be conducted in February and March, 1972, which would result in a delay on their scores being sent to them.

The testing phase of the project has now been completed, with a total of 732 vocational education teachers in Florida having been administered the General Examinations of the College Level Examination Program (CLEP). This number is adequate for building the desired norms. A list of the testing centers and the numbers of teachers tested in each center is attached.

Construction of Test Norms by Degree Level and by Certification Rank: A deck of punched cards containing the scores of teachers tested in the fall has been received from Education Testing Service. A computer program is being written to produce percentile scores by level of degree and by level of certification.

On or about May 1, 1972, a similar deck of cards containing the scores of teachers tested in the early spring will be received from ETS. Percentile norms for these teachers will also be developed and compared to the norms for the teachers tested in the fall.

Assessing the Impact of the CLEP Test on Aspiration Level: To assess the impact of the test battery upon the occupational and educational aspirations of the teachers, teachers selected for testing were randomly divided into two groups of equal size. Two additional groups composed of teachers who were not scheduled to take the test were also randomly selected.

The collection of data from the teachers in being carried forward in three phases. In the first phase, each of the teachers in the four groups was mailed a letter explaining the objectives of the study and requesting that he provide information about his personal characteristics such as sex, age, marital status, religion, etc. A questionnaire was distributed to two groups at the time of testing and the the two groups that were not tested by mail. The confidentiality of all responses was emphasized and each teacher was provided a self-addressed envelope for returning the questionnaire which included an aspiration scale.

The members of the two groups that were tested received the post-test survey instrument designed to reflect changes in teacher characteristics that occurred since responding to the first questionnaire. The post-test level of aspiration is measured by the scale contained in this questionnaire. Teachers who were tested were asked to respond to the questionnaire without the knowledge of their test results.

The final phase will require the completion of the questionnaire by those teachers who responded initially but who did not receive a questionnaire after testing. These teachers made up 50 percent of the teachers asked to take the examination (one test group) and an equal percent that made up one control group.

E. Anticipated Final Results

1. Recommended cutoff scores for awarding credit by examination to vocational education teachers who do not have the baccalaureate will result from the study (Objective Four).

2. Recommended cutoff scores for entry into graduate study will also be yielded (Objective Five).

3. Data obtained from the level of aspiration aspect of the study to indicate the impact that taking the CLEP and of being informed of test performance has on career expectations of vocational education teachers (Objective Six).

4. Although not cited as an objective in the research proposal, the project will indicate areas of academic strengths and weaknesses of vocational education teachers generally. This information will be useful to educators who are scheduling continuing education offerings in various areas of the state.

F. Results to Date

By testing nearly one out of every ten full-time vocational education teachers in Florida, the project staff has attained the hoped-for level of participation of teachers in the project. In completing the

testing phase of the project, the project staff has completed the most time-consuming aspect of the study.

G. Proposed Plans for Continuation

The project is running slightly behind schedule because of the extension of the test administration.

Yet to be done are the following: (1) the development of the norms, (2) the final gathering of level of aspiration data, (3) the analyses of test scores and questionnaire data, (4) imparting to the teachers knowledge of their test performance, and (5) preparation of the final report.

Admittedly, to accomplish the above activities in three months will be difficult, but not unusually so. There may be some necessity for continuing the study for 60 days to complete the final report. A carry-over of funds will be sought for if an extension of time is requested, but no additional funds will be needed.

Although a rating scale for vocational education teachers was developed and given a tryout, this instrument has not been used in the project, and probably will not be used. The scale was developed to determine if there was a substantial number of teachers among the examinees who were unsatisfactory in the classroom. Inasmuch as a representative local directors of vocational education reported that, generally, the teachers taking the tests were among their best teachers, using the rating scale to screen out unsatisfactory teachers appeared to be an unnecessary step to take.

G. Emerson Tully
Director of Educational Research
State University System
Project Director

GET:mc

Appendix C

Request for Extension of Funds,
Project 2-5034 until December 31, 1972

Re: Project 2-5034, "Assessing the Suitability of the College Level Examination Program (CLEP) Tests for Admitting Vocational Education Teachers to Graduate Schools of Education in Florida's State Supported Institutions"

The above project was funded in the amount of $29,970.39 to be conducted during the period July 1, 1971 until June 30, 1972. By the end of June, 1972, I will have spent or encumbered $19,500, leaving a balance of approximately $10,000.

I respectfully request that the $10,000 balance as of July 1, 1972 be made available to the project until the end of calendar 1972, thereby enabling me to perform those activities that have been delayed for justifiable reasons (see "Status of Project--Accomplishments" immediately below). Equally as important, I wish to carry out additional studies closely related to the original problem that will provide greater depth and meaning to the investigation (see "Needed Additional Research" pp. 2-3).

Status of Project--Accomplishments

A total of 732 vocational education teachers in Florida were administered the General Examinations of the CLEP. Test norms by level of degree were developed (Tables 1-3).

We now have sufficient data on hand to recommend CLEP cutoffs for (a) entry into graduate study and (b) awarding of lower division credit to vocational education teachers who do not have the associate in arts.

The administration of the CLEP, development of the Florida CLEP norms, and informing the participating teachers of their test performance (now in progress) constitute the three principal most extensive and time-consuming activities of the project. With the activities behind us, we are almost ready to write the final report.

Yet to be done:

The test performance of vocational education teachers by level of certification, by rating of supervisors, and by the time interval between formal schooling and test administration has not been determined. We were unable to collect the necessary data for all teachers in the sample until the late spring, which did not give us sufficient time to conduct these analyses.

We were also running behind schedule in assessing the impact of test score knowledge on the aspiration of teachers. Technical problems with Education Testing Service concerning card layout delayed us in developing state norms. We were therefore delayed in sending scores to teachers, which in turn, held up the administration of the level of aspiration instrument.

Needed Additional Research

As the project developed, new aspects of the problem surfaced that should be pursued. The money remaining in the project is sufficient (see attached budget) and the time between now and the end of the calendar year is adequate for us to accomplish the original objectives fully and to conduct the projected additional research. The specific areas of additional research, all directly related to the original problem, are listed below:

1. The Jacksonville Study. After the proposal was approved, the project staff had the opportunity to administer the CLEP to 79 Jacksonville teachers who were entering graduate study with a waiver of admissions requirement.

   Project funds are needed to subject this group of scores to in-depth study in which CLEP performance will be associated with success criteria of the first year graduate study. The rating form, developed for the project but not administered with the statewide sample at the suggestion of several local directors, will likely be used with the Jacksonville teachers.

2. Equivalent GRE and CLEP norms. During the project, we learned that substantial numbers of the persons taking the CLEP had previously taken the GRE. If we are allowed to carry over project funds, we will retrieve GRE scores and develop equivalent norms for the two tests.

3. Age as a factor in CLEP test performance. A study of mean CLEP scores for persons at the three levels of degree attainment showed the best performance in social studies and history and the poorest performance in mathematics (Table 4 attached). This pattern of mean scores supports the postulate (which attracted most attention after the proposal was submitted) that a person's score tends to improve on the social studies-history test and dropoff in mathematics as the time interval between the end of formal schooling and the taking of the test increases.

   We would like to put on tape all biographic data on hand, including age and the interval between the end of formal schooling and test administration, to establish the association between test scores and these factors. We believe we have the

best set of data presently available in the country for such a study.

4. CLEP scores by sex and by rank. At the time the study sample was taken, we were unable to determine the rank of the teachers in our sample; we obtained this information from them during testing. We would now like to pursue the original objective of building CLEP norms by rank of certification, and in addition, build separate norms for both men and women.

5. Curricula implications of the study. An investigation needs to be made of the implications that the obtained CLEP scores have for the in-service training of vocational education teachers. Most of the data are in hand, but analyses need to be made to provide a basis for recommendations on this issue.

Proposed Budget

For extending Project 2-5034, "Assessing the Suitability of the College Level Examination Program (CLEP) Tests for Admitting Vocational Teachers to Graduate Study in the State Universities of Florida, from June 30, 1972 to December 31, 1972.

Salaries			
Statistician II Brad Cowles	7/1/72-12/31/72	$ 8,200.00	$ 4,100.00
Secretary II (To be appointed)	7/1/72-12/31/72	4,368.00	2,184.00
Travel			1,200.00
Equipment & Supplies			800.00
Other			
Computer Time			600.00
Equipment Rental			1,050.00
	Total		$ 9,934.00

Respectfully submitted,

G. Emerson Tully
Director of Educational Research
State University System
Project Director

GET:mm
6-6-72

Appendix D

STATE UNIVERSITY SYSTEM
Teachers Tested in the CLEP Program
1971-72

Date	Test Center	No. Tested	Total No. Tested
Oct. 2	Wolfson High School (Duval)	59	59
Nov. 6	Chipola Junior College	8	
" "	Daytona Beach Community College	21	
" "	Lake City Community College	16	
" "	Lake-Sumter Community College	14	
" "	Okaloosa-Walton Junior College	8	
" "	St. Johns River Community College	6	
" "	Santa Fe Junior College	12	
" "	Tallahassee Community College	10	95
Nov. 13	Brevard Community College	29	
" "	Central Florida Community College	5	
" "	Edison Junior College	6	
" "	Florida Junior College at Jacksonville	23	
" "	Florida Keys Community College	2	
" "	Gulf Coast Community College	9	
" "	Hillsborough Community College	43	
" "	Indian River Community College	6	
" "	Miami-Dade Junior College	72	
" "	Polk Community College	11	
" "	St. Petersburg Junior College	29	
" "	Seminole Junior College	9	
" "	South Florida Junior College	3	247
Nov. 20	Broward Community College	20	
" "	Manatee Junior College	29	
" "	North Florida Junior College	3	
" "	Pensacola Junior College	17	
" "	Valencia Community College	7	76
Dec. 18	Palm Beach Junior College	13	13
Jan. 29	Wolfson High School (Duval)	20	20
Mar. 4	Polk County Voc Tech Center	17	17
Mar. 11	Miami-Dade Junior College	39	
" "	Tampa Bay Area Voc Tech Center	44	
" "	Wymore Technical Center (Orange)	49	132
Mar. 18	Geo. Stone Voc Tech Center (Escambia)	16	
" "	Pinellas Voc Tech Institute	45	61
Mar. 25	Monroe Center (Brevard)	12	12
	Total number tested		732

Appendix E

DEGREE LEVEL - ABOVE BACHELORS

TEST - ENGLISH - TOTAL

NUMBER - 64

MEAN - 452.28

STANDARD DEVIATION - 103.58

VARIANCE - 10728.29

SCORE	PER RANK
251	0.78
266	2.34
276	3.91
292	6.25
322	8.59
327	10.16
333	12.50
338	14.84
343	16.41
348	17.97
353	19.53
363	22.66
370	25.78
374	27.34
379	28.91
384	30.47
399	32.03
404	33.59
409	36.72
415	39.84
435	42.19
440	45.31
450	47.66
456	53.91
461	60.16
476	61.72
481	63.28
486	64.84
502	67.19
507	69.53
522	71.09
527	75.00
553	78.91
566	80.47
579	82.81
584	86.72
604	89.84
609	91.41
615	92.97
625	94.53
635	96.88
640	99.22

DEGREE LEVEL - ABOVE BACHELORS

TEST - NATURAL SCI-TCT

NUMBER - 64

MEAN - 477.47

STANDARD DEVIATION - 90.82

VARIANCE - 8248.22

SCORE	PER RANK
294	0.78
329	2.34
336	3.91
349	5.47
370	8.59
377	12.50
383	15.63
390	17.97
397	19.53
404	22.66
410	25.78
411	30.47
418	35.94
424	39.06
445	41.41
452	44.53
459	47.66
472	49.22
479	50.78
486	53.13
493	57.03
500	60.94
506	63.28
513	64.84
520	66.41
527	67.97
534	69.53
541	72.66
547	75.78
561	78.13
568	81.25
582	84.38
588	86.72
602	89.06
616	91.41
623	93.75
630	96.09
643	97.66
691	99.22

DEGREE LEVEL - ABOVE BACHELORS

TEST - MATHEMATICS-TOT

NUMBER - 64

MEAN - 445.58

STANDARD DEVIATION - 84.03

VARIANCE - 7060.61

SCORE	PER RANK
317	0.78
333	2.34
349	3.91
357	8.59
381	16.41
389	23.44
397	29.69
405	35.16
413	38.28
421	39.84
429	43.75
437	52.34
445	60.16
453	64.06
461	66.41
469	69.53
477	74.22
485	78.13
490	80.47
493	82.81
501	85.16
509	87.50
517	89.84
541	91.41
557	92.97
581	94.53
605	96.09
773	97.66
781	99.22

DEGREE LEVEL - ABOVE BACHELORS

TEST - HUMANITIES -TOT

NUMBER - 62

MEAN - 458.63

STANDARD DEVIATION - 89.32

VARIANCE - 7977.22

SCORE	PER RANK
293	0.81
304	2.42
316	4.84
338	7.26
349	8.87
355	11.29
361	14.52
372	16.94
378	19.35
389	22.58
394	25.81
400	29.03
406	31.45
410	33.06
411	35.48
417	37.90
423	39.52
434	42.74
445	46.77
451	50.00
456	53.23
468	56.45
473	59.68
490	62.10
496	63.71
501	67.74
518	71.77
524	73.39
530	75.81
535	79.84
541	83.87
552	86.29
558	87.90
586	90.32
603	92.74
614	94.35
620	95.97
642	97.58
687	99.19

DEGREE LEVEL - ABOVE BACHELORS

TEST - SOC & HIST -TOT

NUMBER - 62

MEAN - 495.37

STANDARD DEVIATION - 78.75

VARIANCE - 6201.75

SCORE	PER RANK
327	0.81
333	2.42
353	4.03
366	5.65
373	7.26
386	8.87
393	10.48
406	12.90
412	16.13
419	19.35
439	23.39
445	27.42
455	29.84
459	31.45
465	34.68
472	38.71
478	41.13
485	45.16
492	49.19
505	53.23
511	58.06
525	61.29
531	63.71
538	65.32
544	69.35
551	75.00
558	79.03
564	81.45
571	83.87
577	86.29
584	88.71
604	91.13
610	92.74
617	94.35
624	95.97
630	97.58
696	99.19

DEGREE LEVEL - ABOVE BACHELORS

TEST - SOC & HIST -TOT

NUMBER - 62

MEAN - 495.37

STANDARD DEVIATION - 78.75

VARIANCE - 6201.75

SCORE	PER RANK
327	0.81
333	2.42
353	4.03
366	5.65
373	7.26
386	8.87
393	10.48
406	12.90
412	16.13
419	19.35
439	23.39
445	27.42
455	29.84
459	31.45
465	34.68
472	38.71
478	41.13
485	45.16
492	49.19
505	53.23
511	58.06
525	61.29
531	63.71
538	65.32
544	69.35
551	75.00
558	79.03
564	81.45
571	83.87
577	86.29
584	88.71
604	91.13
610	92.74
617	94.35
624	95.97
630	97.58
696	99.19

Appendix F

DEGREE LEVEL = BACHELORS

TEST = ENGLISH - TOTAL

NUMBER = 303

MEAN = 420.87

STANDARD DEVIATION = 86.86

VARIANCE = 7545.28

SCORE	PER RANK
215	0.17
230	0.50
235	0.83
251	1.16
261	1.82
266	2.48
271	2.97
276	3.96
281	5.12
286	5.78
297	6.27
302	7.10
307	8.25
312	9.57
317	10.40
322	11.06
323	11.72
327	12.87
328	14.03
333	15.18
338	17.00
343	18.81
344	19.97
348	21.62
349	23.43
353	24.42
358	25.58
363	27.56
368	29.87
370	30.86
374	31.35
375	32.01
379	33.33
380	34.49
384	35.31
385	36.63
389	38.12
390	39.60
394	41.42
396	42.74
399	44.22
404	46.37
406	47.36
409	48.68
415	51.16
416	52.64
420	53.14
425	54.13
427	54.95
430	55.78
435	57.10
437	57.92
440	58.91
442	60.07
445	62.05
448	64.19
450	65.68
456	67.33
458	68.15
461	69.47
466	71.12
468	71.78
471	73.10
476	74.75
479	75.41
481	75.91
484	76.57
486	77.23
492	77.89
494	78.55
497	79.70
502	81.02
507	82.01
510	82.67
515	83.00
517	84.16
520	85.48
522	85.97
526	86.47
527	87.13
531	87.79
533	88.45
536	89.27
538	90.10
543	91.09
551	91.91
553	92.41
557	92.90
558	93.23
562	93.56
568	93.89
574	94.39
583	94.88
584	95.38
589	96.20
594	96.86
598	97.19
599	97.52
609	98.02
615	98.51
629	98.84
634	99.17
635	99.67

DEGREE LEVEL - BACHELORS

TEST - NATURAL SCI-TOT

NUMBER - 303

MEAN - 447.74

STANDARD DEVIATION - 86.84

VARIANCE - 7541.76

SCORE	PER RANK
253	0.17
272	0.50
288	1.16
292	1.82
294	2.15
298	2.48
301	2.81
305	3.14
308	3.80
311	4.46
315	4.79
322	5.28
325	5.78
329	6.60
336	8.58
342	10.40
349	12.21
351	13.70
356	14.85
358	16.34
363	17.66
364	18.81
370	20.13
377	22.28
383	24.59
384	26.07
390	27.56
391	29.04
397	29.87
404	31.52
410	33.17
411	35.48
417	37.46
418	38.61
424	41.75
430	44.55
431	46.86
437	48.84
438	50.66
443	52.31
445	53.80
450	55.78
452	57.26
457	58.25
459	59.24
463	60.23
465	61.39
472	63.20
479	65.02
483	66.17
486	67.00
490	67.99
493	69.31
496	70.46
500	71.78
506	74.09
509	75.41
513	76.90
516	78.38
520	80.03
523	81.68
527	82.01
529	82.51
534	83.33
536	83.99
541	84.98
542	86.14
547	86.80
554	87.79
556	88.61
561	89.27
568	90.10
569	90.59
575	91.25
582	92.41
588	93.40
589	93.89
595	94.39
602	95.21
609	96.20
616	97.19
623	98.18
630	98.84
636	99.17
705	99.50

DEGREE LEVEL = BACHELORS

TEST = MATHEMATICS-TOT

NUMBER = 303

MEAN = 413.01

STANDARD DEVIATION = 61.24

VARIANCE = 3749.76

SCORE	PER RANK
285	0.17
301	0.66
317	1.49
325	2.81
333	4.13
341	5.45
349	8.25
354	10.40
357	12.54
361	15.02
365	18.65
368	22.28
373	25.58
375	28.71
381	31.02
383	33.33
389	36.96
390	41.25
397	45.05
404	48.51
405	51.82
411	55.28
413	57.92
418	60.73
421	64.52
425	67.49
429	69.80
432	72.77
437	75.08
440	76.90
445	77.89
447	78.71
453	79.87
454	81.85
461	83.83
468	85.31
469	86.96
475	88.45
477	89.60
485	90.76
490	91.42
493	92.08
497	92.57
501	93.23
509	93.89
517	94.72
525	95.54
533	95.87
557	96.20
565	96.70
573	97.19
581	97.52
605	97.85
621	98.18
632	98.51
637	98.84
645	99.17
669	99.50
717	99.83

DEGREE LEVEL - BACHELORS

TEST - HUMANITIES -TOT

NUMBER - 294

MEAN - 438.68

STANDARD DEVIATION - 77.81

VARIANCE - 6054.67

SCORE	PER RANK
282	0.17
293	0.68
310	1.87
316	3.40
321	4.42
327	5.27
333	6.12
338	7.48
344	9.01
348	9.69
349	10.71
355	12.07
361	13.44
366	15.99
372	19.39
376	21.60
378	23.64
382	25.51
383	26.87
389	29.25
393	30.78
394	31.46
399	32.82
400	34.86
404	36.39
406	38.10
410	39.80
411	41.33
415	42.86
417	44.90
421	46.94
423	48.47
427	49.83
428	50.85
434	52.55
438	53.57
439	54.59
443	55.95
445	57.48
449	58.84
451	60.37
455	62.07
456	63.44
460	64.46
462	65.31
466	66.67
468	68.54
471	70.07
473	70.92
477	71.77
479	73.64
482	75.68
484	76.70
490	78.23
494	79.42
496	79.93
499	80.44
501	80.95
505	81.46
507	82.31
513	83.33
518	84.35
522	85.20
527	85.54
530	86.22
533	86.90
535	87.41
544	87.93
546	89.12
552	90.31
555	90.82
558	91.67
569	92.35
572	92.69
580	93.37
583	94.22
591	94.73
597	95.07
603	95.41
605	95.75
614	96.60
617	97.45
620	97.96
625	98.47
628	98.98
636	99.49
698	99.83

DEGREE LEVEL - BACHELORS

TEST - SOC & HIST -TOT

NUMBER - 294

MEAN - 455.52

STANDARD DEVIATION - 78.63

VARIANCE - 6181.90

SCORE	PER RANK
254	0.17
261	0.51
300	1.02
307	1.70
314	2.21
320	2.72
327	3.23
334	3.57
340	4.59
346	6.46
353	8.84
360	10.37
366	11.22
373	13.61
379	16.67
381	18.20
386	19.90
388	21.60
393	22.96
399	25.34
401	27.21
406	29.42
408	31.63
412	32.82
414	34.35
419	36.05
421	37.07
426	38.61
428	40.31
432	42.18
435	44.05
439	46.26
441	48.13
445	48.81
448	50.00
452	52.38
455	54.59
459	56.29
461	57.82
465	59.35
468	60.71
472	61.05
475	61.39
478	62.59
481	63.78
485	64.46
492	65.48
495	66.50
498	68.37
502	69.90
505	70.92
511	73.47
515	75.68
518	76.87
525	78.57
528	79.76
531	81.63
535	83.67
538	85.03
544	86.56
548	87.41
551	88.10
555	88.61
558	89.12
562	89.80
564	90.65
571	91.33
575	91.67
577	92.69
584	93.71
589	94.05
591	94.56
597	95.58
604	96.60
610	97.11
615	97.45
617	97.79
624	98.13
630	98.64
643	99.15
670	99.49
676	99.83

Appendix G

DEGREE LEVEL - BELOW BACHELORS

TEST - ENGLISH - TOTAL

NUMBER - 356

MEAN - 373.24

STANDARD DEVIATION - 78.91

VARIANCE - 6227.20

SCORE	PER RANK
200	0.14
235	0.42
240	0.70
245	1.69
251	2.95
256	3.65
261	4.78
266	6.64
271	7.16
276	8.85
281	10.96
286	13.06
292	14.61
297	16.71
302	19.66
307	22.19
312	24.44
317	26.54
322	29.92
327	33.29
333	35.11
338	37.64
343	40.31
348	42.70
353	45.65
358	48.03
363	49.86
368	52.67
374	55.62
379	57.87
384	60.11
389	62.64
394	64.75
399	66.15
404	67.70
409	69.66
415	71.21
420	72.75
425	74.30
430	75.14
435	76.26
440	78.37
445	80.48
450	81.60
456	82.72
461	83.99
466	85.53
471	86.66
476	87.78
481	89.61
492	90.73
497	91.85
502	93.54
507	94.66
512	95.37
517	95.93
522	96.35
527	97.33
533	98.17
538	98.46
553	98.74
558	99.02
615	99.30
640	99.58
681	99.86

DEGREE LEVEL - BELOW BACHELORS

TEST - NATURAL SCI-TOT

NUMBER - 356

MEAN - 441.32

STANDARD DEVIATION - 85.61

VARIANCE - 7328.40

SCORE	PER RANK
267	0.14
274	0.42
294	0.70
301	1.12
308	2.11
315	3.65
322	5.48
329	7.30
336	8.99
342	11.24
349	13.48
356	15.31
363	17.42
370	20.51
377	24.16
383	28.51
390	32.30
397	35.11
404	38.62
411	42.42
418	46.21
424	48.74
431	50.14
438	51.54
445	54.92
452	58.57
459	61.24
465	63.62
472	66.15
479	69.24
486	71.91
493	74.16
500	76.12
506	78.37
513	80.20
520	81.74
527	83.15
534	84.55
541	85.81
547	86.80
554	88.06
561	89.75
568	91.29
575	92.13
582	92.98
588	94.10
595	94.94
602	95.51
616	96.07
623	96.63
630	97.19
636	97.61
643	97.89
650	98.17
657	98.60
664	99.16
684	99.58
739	99.86

DEGREE LEVEL - BELOW BACHELORS

TEST - MATHEMATICS-TOT

NUMBER - 356

MEAN - 402.95

STANDARD DEVIATION - 55.94

VARIANCE - 3129.57

SCORE	PER RANK
293	0.14
309	0.56
317	1.54
325	3.23
333	5.20
341	7.02
349	11.10
357	17.56
365	25.70
373	34.83
381	42.13
389	48.03
397	54.07
405	60.11
413	65.59
421	70.22
429	74.30
437	77.95
445	80.06
453	82.72
461	85.81
469	88.48
477	91.29
485	92.98
493	94.10
501	94.80
509	95.08
517	95.65
525	96.21
533	96.63
541	97.19
557	97.61
565	97.89
573	98.17
581	98.60
589	99.02
597	99.44
693	99.86

DEGREE LEVEL - BELOW BACHELORS

TEST - HUMANITIES -TOT

NUMBER - 353

MEAN - 420.19

STANDARD DEVIATION - 78.02

VARIANCE - 6087.10

SCORE	PER RANK
265	0.28
276	0.71
282	0.99
293	1.98
299	3.26
304	3.97
310	4.96
316	6.37
321	8.78
327	11.33
333	13.31
338	15.58
344	17.42
349	19.26
355	22.52
361	26.20
366	29.32
372	32.15
378	33.99
383	36.12
389	39.09
394	42.07
400	44.05
406	45.47
411	47.88
417	51.27
423	54.11
428	56.37
434	59.35
439	62.46
445	65.72
451	68.27
456	69.97
462	71.95
468	73.94
473	75.50
479	77.34
484	78.90
490	80.31
496	81.59
501	82.86
507	84.99
518	87.11
524	89.09
530	90.79
535	91.78
541	92.49
546	93.20
552	93.91
558	94.90
563	95.75
569	96.32
575	96.74
580	97.17
591	97.59
597	97.88
603	98.16
620	98.44
631	98.87
636	99.43
642	99.86

DEGREE LEVEL - BELOW BACHELORS

TEST - SOC & HIST -TOT

NUMBER - 353

MEAN - 444.52

STANDARD DEVIATION - 73.25

VARIANCE - 5365.19

SCORE	PER RANK
300	0.28
307	0.85
313	1.56
320	2.41
327	2.97
333	4.11
340	6.66
346	9.21
353	10.76
360	12.89
366	15.86
373	18.41
379	20.96
386	23.65
393	26.35
399	29.18
406	32.15
412	35.13
419	38.67
426	42.92
432	45.75
439	47.73
445	51.70
452	56.23
459	59.92
465	63.46
472	67.00
478	70.25
485	73.23
492	75.92
498	77.34
505	79.04
511	81.59
518	83.29
525	84.70
531	86.40
538	88.10
544	89.80
551	91.36
558	92.49
564	93.48
571	94.76
577	95.61
584	95.89
591	96.46
597	97.03
604	97.45
610	98.02
617	98.44
630	98.87
637	99.29
650	99.72

Appendix H

Comparative Performance of Vocational Education Teachers in Florida and College Sophomores on the General Examinations, College Level Examination Program (CLEP)

G. Emerson Tully
Director of Educational Research
State University System of Florida

Introduction

In Florida, eligibility for admission to graduate study in the state universities is established by at least a grade point average (GPA) of "B" during upper-division study (junior and senior year) or a 1,000 total score on the Aptitude Test of the Graduate Record Examination (GRE). Each of the state universities, however, may accept up to 10 percent of its graduate students admitted for an academic year as exceptions to the established procedure. Students admitted as exceptions must meet other criteria set by the university, such as satisfactory performance in post-graduate study or in professional-level work.

Although vocational education teachers must pursue a program of graduate education to attain the higher levels of teacher certification, many persons preparing for a career in vocational education do not enter graduate study until their late 20's or early 30's. Vocational education teachers must acquire a proficiency in their chosen occupational fields to become certified, and many accomplish the work phase of their professional preparation as a vocational education teacher before entering into undergraduate work. Having invested time in both a full-time job and in undergraduate study, the vocational education teacher tends to take a teaching position as soon as he has completed all phases of his training, and to postpone entry into graduate study. More likely than not, when the vocational education teacher in Florida reaches a point in his career development of embarking on a master's program of study, he encounters difficulty in meeting either of the two established admissions requirements.

Many test administrators and other educators regard the senior year of baccalaureate study as the time that persons generally will perform best on the Aptitude Test of the GRE. This belief is particularly widespread among educators in vocational, technical, and adult education. The Aptitude Test of the GRE is, in their view, less of a barrier to graduate study for the person of age 22 than for a person of age 35. In their thinking, the GRE Aptitude Test is more of an obstacle to vocational education teachers who seek to enter master's level work than to

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Presented at the 1973 Annual Meeting, National Council on Measurement in Education, New Orleans, Louisiana, February 27, 1973.

persons in other disciplines, inasmuch as vocational education teachers tend to be older than other candidates for graduate study when tested.

If the postulate is accepted that the span of years between classroom study and taking a test affects test performance, then a fair and equitable admissions test for the vocational education teacher seeking to enter master's level study is one that measures out-of-class learning. The General Examinations of the College Level Examination Program (CLEP), "constructed to measure knowledge acquired through nontraditional means as well as through college study,"[1] warrant assessment as a possible alternative to the Aptitude Test of the GRE for specific use with vocational education teachers applying to enter a master's program of graduate study. Such an assessment should determine, if possible, whether older applicants are to be accorded a lower score cutoff than relatively younger applicants.

Sharon analyzed the scores of more than 43,000 military personnel on the General Examinations of the CLEP to determine (a) the comparative performance of the non-college military personnel and a representative sample of college students, (b) the relationship between academic knowledge and formal education, and (c) whether the level of knowledge in a subject area is related to age.[2] He found that the servicemen (69 percent of whom had no formal education beyond high school) were outscored significantly by the college students, that achievement on the CLEP rose according to level of education, and that there was a rise in knowledge as measured by the CLEP tests in relatively informal academic subjects (social studies-history) and a decline in more formal subjects (English composition and mathematics).

A research project was conducted in Florida in 1971-72 to assess the suitability of the General Examinations of the CLEP as a possible alternative test to the GRE Aptitude in the admission of vocational education teachers to master's level study. Specifically, the purpose of the study was to assess the factor of age in test performance. This purpose was pursued by comparing the performance of a sample of Florida vocational education teachers grouped into age brackets to that of a national sample of college sophomores on the CLEP General Examinations. The study was supported principally by a grant from the Division of Vocational, Technical, and Adult Education, Florida Department of Education. The College Entrance Examination Board, which publishes and distributes the CLEP tests, also contributed to the support of the project.

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[1] Tests and Services: College Level Examination Program, College Entrance Examination Board, New York, 1970, p. 4.

[2] Sharon, A. T., Adult Academic Achievement in Relation to Formal Education and Age, Adult Education Journal, Vol. XXI, No. 4, 1971, pp. 231-237.

Method

During the school year 1971-1972, the General Examinations of the CLEP were administered to 732 of the 7,000 or more certified vocational education teachers in Florida. Although the sample was drawn at random, vocational education teachers not in the sample who wanted to obtain a CLEP score were admitted to the test session. Fewer than 50 examinees were estimated to fall into this category of self-inclusion in the sample. Also, the investigator authorized the district directors of vocational education to designate teachers to report for testing in place of teachers in the sample who were not able, for one reason or another, to take the tests. As a result, the sample of teachers actually taking the test was not fully a random one.

Because of the geography of Florida, the test was administered on the campuses of the 27 public community colleges throughout the state instead of in a central location. The tests were given on Saturdays. Each center was allowed to select a Saturday in late 1971 or early 1972 that best suited test administrator availability, access to testing rooms, etc. Testing specialists in each community college, experienced in administering the CLEP, served as test administrators. No charge for taking the test was assessed against the teachers.

Punched cards containing the scores of the five tests comprising the General Examinations of the CLEP were obtained from Educational Testing Service. The cards were grouped according to the degree level of the examinees (master's, baccalaureate, and nonbaccalaureate) and percentile scores established for the three sub-groups of examinees. Mean scores for the teachers, grouped according to degree level, were computed. Mean scores for the college sophomores were obtained from College Board sources.[3]

No measures of the academic aptitude of either the college sophomores or the vocational education teachers were available to the investigator. Neither were the ages of the college sophomores available. The ages of the teachers were obtainable, however, making possible a comparison of the performance of the college sophomores with that of the teachers, when the latter were grouped into ten-year age brackets. On the assumption that the college sophomores were in their late teens or early twenties when tested, a comparison of the performance of the college sophomores on the five tests to that of the teachers grouped according to age was made to provide a tentative basis for assessing the impact of age on test performance.

There was no test-retest design to the study. The variables under review were the age of the teachers at time of testing and the level of formal education attained. The impact of these variables on test

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[3]What Your Scores Mean, College Level Examination Program, College Entrance Examination Board, 1971.

performance was assessed by grouping the teachers according to age brackets and degree level, and making a comparative analysis of their performance with that of college sophomores.

Teachers who were selected in the sample to be tested were informed of the purpose of the project--to assess the suitability of the General Examinations of the CLEP as a possible alternative to the GRE Aptitude in admission of vocational education teachers to master's level study. To encourage the teachers to take the tests, the teachers in the sample were told that the CLEP scores earned as participants in the project could be used to obtain undergraduate credit if their scores met the cutoffs established by colleges and universities from which the teachers sought credit by examination. In that the non-baccalaureate teachers more to gain immediately from taking the tests than the other two sub-groups of teachers, non-baccalaureate teachers in the sample may have possessed a higher motivational set toward taking the tests than did the baccalaureate and master's degree examinees. No measurement of the attitude of the teachers toward taking the test was attempted, however, and no basis was established for weighing the impact of the motivational factor on test performance.

Results and Discussion

As expected, the test performance of vocational education teachers was shaped in part by the level of their formal education. The highest means were obtained by master's level examinees, the next highest by baccalaureate examinees, and the lowest by non-baccalaureate examinees (Table 1).

The average mean score differences between teachers with the master's degree and those with the baccalaureate on the five tests was 30 points and the average score difference between teachers with the baccalaureate and those without the baccalaureate was 20 points. In a general sense, this finding supported Sharon's findings that CLEP scores rise according to the level of formal education of the examinees.

The percents of vocational education teachers, grouped according to degree level and age, scoring at or above the mean for college sophomores on each of the five tests were computed as an approach for viewing test score dropoff and rise in the test performance of the teachers.

Students in the college sophomore norm group exceeded the performance of vocational education teachers, not grouped by age, on nearly all five tests of the CLEP battery. As shown in Table 2, the percentages of teachers with scores at or above the mean for the norm group did not reach 50 percent except for master's level examinees in social studies-history.

Although college sophomores outscored the vocational education teachers generally on the CLEP, the percentages in Table 2 revealed that

Table 1: Mean Scores on the General Examinations of the CLEP of Vocational Education Teachers at Three Degree Levels

	English Composition	Natural Science	Mathematics	Humanities	Social Studies-History
Master's					
(n = 62-64)	452	477	446	459	495
SD	104	91	84	89	79
Baccalaureate					
(n = 294-303)	421	448	413	439	456
SD	87	87	61	78	79
Non-Baccalaureate					
(n = 353-356)	373	442	403	420	445
SD	79	86	56	78	73

Table 2: Percents of Vocational Education Teachers, Grouped According to Degree Level, Scoring at or Above the Means for College Sophomores

	English Composition	Natural Science	Mathematics	Humanities	Social Studies-History
Sophomore Mean	498 (n = 2582)	498 (n = 633)	498 (n = 663)	499 (n = 678)	498 (n = 607)
Master's (n = 62-64)					
Percent Above Sophomore Mean	34%	41%	16%	35%	50%
Baccalaureate (n = 294-303)					
Percent Above Sophomore Mean	19%	29%	7%	19%	30%
Non-Baccalaureate (n = 353-356)					
Percent Above Sophomore Mean	7%	25%	5%	18%	22%

considerable numbers of non-baccalaureate teachers, not all of whom had completed two years of college, scored at or above the means for the college sophomore sample. This finding suggested that test performance for all teachers in the sample was not fully determined by level of formal education.

Mean scores for vocational education teachers on the five tests, grouped according to level of education and age of the teachers, are shown in Table 3. To refer again to Sharon's study, one notes that the servicemen whom he tested were a much younger group than the vocational education teachers. The servicemen were ranged in age mostly from 19 to 22, with 21 as the median age.[4] In contrast, 63 percent of the vocational education teachers were age 41 or above. The pattern of higher and lower mean scores for servicemen when age ranged from 19 to 22 did not fit precisely the pattern of scores earned by older vocational education teachers when age varied from 21 to 60. In science and mathematics there was a decline in the mean scores of older teachers, which was in keeping with Sharon's findings with servicemen. On the other hand, Sharon reported a rise in achievement in humanities and social studies-history for servicemen at the upper-age range, but older teachers in the master's level sub-group scored lower on these two tests than younger teachers. For baccalaureate teachers, mean scores in natural science, humanities, and social studies-history rose somewhat as age increased. Mean scores for non-baccalaureate examinees showed the same pattern as the mean scores of the servicemen, dropping in natural science and mathematics and rising in humanities and social studies-history in the older age brackets.

Overall, this pattern of rises and dropoffs in test means for adults in the study sample did not reflect a loss of knowledge in the formal disciplines (natural science and mathematics) and a gain in less formal subjects (humanities and social studies-history), as suggested by Sharon's findings with younger servicemen. Vocational education teachers at all degree levels and age levels tended to perform best in natural science and social studies-history and poorest in English and mathematics.

Table 2 showed the percent of vocational education teachers of all ages scoring at or above the means for college sophomores. Table 4 sets forth the percents scoring at or above the college sophomore means when the teachers were grouped into age brackets. In that the sample of teachers was not altogether a random one, and there were no controls for academic aptitude and motivational set toward the tests on the part of the teachers, constraints upon the findings were substantial. Even so, the data in Table 4 underscored the success achieved by substantial numbers of vocational education teachers, whose formal education was not only limited but which had ended some years earlier, in attaining the same level of proficiency on the battery as college sophomores.

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[4] Op. cit., Sharon, p. 232.

Table 3: Means of Vocational Teachers in the CLEP General Examinations by Degree Level and Age Bracket

	Sophomore Means	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.
Master's					
n		10	10	22	8
English	498	514	488	443	402
Nat. Sci.	498	513	499	462	480
Mathematics	498	496	456	447	412
Humanities	499	498	482	448	430
Soc. S.-His.	498	534	510	502	428
Baccalaureate					
n		58	49	54	30
English	498	440	403	411	418
Nat. Sci.	498	451	448	449	472
Mathematics	498	416	394	417	431
Humanities	499	428	418	445	450
Soc. S.-His.	498	445	443	464	472
Non-Baccalaureate					
n		14	61	148	83
English	498	392	373	379	365
Nat. Sci.	498	458	446	445	435
Mathematics	498	424	410	399	405
Humanities	499	401	402	425	422
Soc. S.-His.	498	432	445	454	438

Table 4: Percents of Vocational Education Teachers, Grouped According to Age and Degree Level, Scoring at or Above the Means for College Sophomores

	Sophomore Means	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.
Master's					
n		10	10	22	8
English	498	60%	50%	32%	12%
Nat. Sci.	498	50%	60%	32%	38%
Mathematics	498	20%	20%	23%	12%
Humanities	499	50%	40%	32%	38%
Soc. S.-His.	498	80%	60%	50%	12%
Baccalaureate					
n		58	49	54	30
English	498	24%	10%	13%	20%
Nat. Sci.	498	38%	31%	26%	40%
Mathematics	498	12%	6%	9%	17%
Humanities	499	14%	10%	20%	33%
Soc. S.-His.	498	26%	33%	39%	43%
Non-Baccalaureate					
n		14	61	148	83
English	498	29%	5%	7%	6%
Nat. Sci.	498	43%	20%	28%	19%
Mathematics	498	14%	12%	2%	4%
Humanities	499	14%	16%	18%	20%
Soc. S.-His.	498	21%	23%	26%	23%

Conclusions

This study was designed to obtain evidence to be brought to bear on the postulate that the interval of time that passes between a person's leaving a program of formal education and taking a comprehensive test battery affects test performance. The study provided no clear-cut findings that suggested that the span of years between classroom study and test taking was either solely an adverse or a salutary factor to test performance. For persons in one age bracket and level of education, achievement test scores in some academic areas rose. For persons in another age bracket and a different level of classroom study, scores dropped. The study, which was more exploratory in design than precisely definitive, offered no basis for proposing that persons of older age be accorded a lower CLEP cutoff score for entry into master's level study than persons in a younger age bracket.

Although the findings of this study did not contribute substantially to identifying the academic disciplines in which achievement uniformly drops off and rises as age increases, the findings revealed that substantial numbers of individuals between the ages of 21 and 60 performed creditably on the battery. The battery, therefore, can be assessed as a suitable device for identifying those persons who continue to learn after their formal education has ended. The General Examinations of the CLEP clearly have merit for the dual purpose of: (a) awarding credit to non-baccalaureate vocational education teachers seeking to obtain credit by examination to apply toward the baccalaureate and (b) admitting applicants to master's level study in vocational education.

Vocational education teachers seeking to establish credit by examination or to enter master's level study should consider remedial work in English, mathematics, and the humanities. The findings of this study did not provide a basis for inferring whether performance was low because of increased age or because knowledge in these areas was never acquired in the first place. Unquestionably, however, these three areas require the attention of vocational education teachers generally who aspire to attain higher levels of certification by returning to formal classroom study or through credit by examination.

References

1. Sharon, A. T., "Adult Academic Achievement in Relation to Formal Education and Age," Adult Education Journal, 1971, XXI, No. 4, pp. 231-237.

2. Tests and Services, College Level Examination Program, New York: College Entrance Examination Board, 1970, p. 4.

3. What Your Scores Mean, College Level Examination Program, New York: College Entrance Examination Board, 1971.

TEACHER ASSESSMENT INQUIRY

(A Confidential Report Obtained for Research Purposes)

Teacher _____ School or College _____ City _____

Directions: Using other vocational-technical teachers whom you have known as a reference group, give your assessment of the above-named teacher by responding to the four items listed below. Before marking your response to an item, read all of the responses listed along the three sectioned continuum, and then mark the response that best characterizes the typical behavior of the teacher. If you do not have an adequate basis for making a response to one or more items, place a check mark in the rightmost column.

Your evaluation of this teacher will be for research purposes and will not be discussed with the teacher nor with anyone else. Your ratings will be used in a statistical analysis in which no specific reference is made either to you or to the teacher.

1. Which of the sets of relationships shown opposite this question best illustrates the teacher's interactions with students?	/___/ Tends to be aloof with students, allows little or no time for interactions with individual students.	/___/ Limits his contacts with students to the classroom, but assists individual students in the classroom who are self-motivated to seek his help.	/___/ Seeks out students needing remedial or advanced instruction. Is receptive to students who turn to him for advice and counsel.	/___/ Inadequate basis for responding.
2. Select the pattern of behavior that is most characteristic of this teacher's relations with other teachers.	/___/ Frequently consults with other teachers on instructional issues, as well as problems of individual students. Is receptive and outgoing toward his colleagues.	/___/ Spends little or no time with his colleagues in the school. Is generally detached and uninvolved with his peers.	/___/ Is responsive to overtures from his colleagues, but does not initiate such interaction. Assumes a neutral posture toward his colleagues--neither withdrawn nor involved.	/___/ Inadequate basis for responding.
3. With reference to professional career development in vocational-technical education, which courses of action best reflect this teacher's future goals and aspirations?	/___/ Voices some awareness of the need for professional development, but has not pursued any sustained action toward clearly defined goals.	/___/ Steadily pursues a program of self-study. Guides himself by a set of long-range objectives. Discusses his plans with others to elicit their assessment and guidance.	/___/ Shows no inclination to develop beyond his present level of professional training. Casts the image of being content not to improve professionally in vocational-technical teaching.	/___/ Inadequate basis for responding.
4. Indicate the present level of development of this person's competence as a teacher by choosing the response that most aptly describes him.	/___/ Fails to relate techniques and practices being taught to clearly defined learning objectives.	/___/ Is guided generally by learning objectives, but is not fully successful in relating his teaching to these objectives. Paces himself through his subject matter in a routine manner that suggests minimum competence.	/___/ Links classroom activities to established learning objectives. Teaches in a manner to reflect solid preparation and competence in his area of specialty.	/___/ Inadequate basis for responding.

Date of Rating _____ Supervisor _____

GET:7-30-71